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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,670

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Cecile Lutz

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EXAMINER

LAWRENCE JR, FRANK M

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

08/27/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@mwzb.com

Office Action Summary	Application No. 10/583,670	Applicant(s) LUTZ ET AL.	
	Examiner Frank M. Lawrence	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 7-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 17, 2010 has been entered.

Claim Objections

2. Claim 1 is objected to because of the following informalities: In line 4 of claim 4, a dash "-" should be inserted after "A" for clarity. In line 12 of claim 1, "90%, of the" should be changed to "90% of the". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 2 and 7-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitation of "consisting of" in line 3 of claim 1 is considered new matter because nothing in the original specification positively excludes the use of other purification

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steps. The other occurrences of “consisting of” in lines 6 and 11 and new claim 21 are acceptable because of discussion on page 5, lines 6-9.

5. The original specification does not enable an aggregate size of less than 4 microns as recited in claim 16. Example 4 discusses the crystal (powder) size used in the aggregate as being less than 4 microns, but not the resulting size of the aggregated powder including binder. To overcome this rejection, claim 16 should be changed to its original wording. This is assumed for examination and claim 16 is considered to have allowable subject matter based on Example 4 in the specification. If the current wording is intended, it would be rejected as an obvious modification of aggregate size.

6. The original specification also does not enable the recitation in claim 18 that hydrocarbons and nitrogen oxides are removed to the extent of 1-5% residual of the initial concentration. The example on page 12 illustrates carbon dioxide removal but no reference is made to the extent of hydrocarbon and nitrogen oxide removal. Claims 2, 7-15, 17, 19 and 20 are rejected for depending from claim 18.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 2 and 7-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is indefinite because line 11 recites that the adsorbent is “consisting of” the following materials, which is a closed group, however line 16 recites that it can “optionally” contain up to 25% of one or more other zeolites. The closed group is not defined and it is unclear whether the presence of the other zeolites is being

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positively recited (see MPEP 2111.03). Claims 2 and 17-20 are indefinite for depending from rejected claim 1.

9. Claim 9 recites the limitation "the adsorbent bed" in line 1. There is insufficient antecedent basis for this limitation in the claim. To overcome this rejection, "bed" can be deleted.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 2, 7-15, 17 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Bancon et al. (2003/0126989 A1).

12. Bancon '989 teach a process for removing carbon dioxide, nitrogen oxides, water, and hydrocarbons from an air-based syngas stream, comprising adsorbing the contaminants on an aggregated zeolite adsorbent followed by desorption and regeneration of the material in a PSA or TSA system. The zeolite can comprise over 90% LSX zeolite that is at least 90% sodium exchanged, and 5-10% residual binder that can be zeolitized (see paragraphs 1, 5, 10-12, 17-22). The adsorbent can further be mixed with or include layers of additional zeolite A or NaX in a ratio of 1:19 to 19:1 (paragraphs 11, 28-31 and col. 2, lines 24-51 of US 6,616,732, equivalent of WO 01/24923 cited in paragraph 11). The adsorbent can be prepared by mixing zeolite powder with a binder, drying at 400-700°C and zeoloitizing the binder (paragraphs 13, 14). The LSX

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zeolite will inherently have a number average of the crystal size less than 4 microns because it has the same structure as the instant LSX zeolite.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bancon '989.

15. Bancon '989 discloses all of the limitations of the claims except that there is a preferred level of carbon dioxide, hydrocarbon, and nitrogen oxide removal. Absent a proper showing of criticality or unexpected results, the amount of impurity removal is considered to be a parameter that would have been routinely optimized by one having ordinary skill in the art at the time of the invention by adjusting conditions such as adsorbent bed length, flow rate, and factors affecting adsorption kinetics such as temperature and pressure.

Allowable Subject Matter

16. Claim 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

17. Applicant's arguments filed August 17, 2010 have been fully considered but they are not persuasive. Applicant argues that the mention of gases other than carbon dioxide in Bancon '989 is incidental and that there is no disclosure that the prior adsorbents can be extremely effective for the removal of the other impurities. The examiner disagrees because Bancon '989 clearly discloses the adsorbent *by itself* as being useful for removing hydrocarbons or NO_x (first sentence of each of paragraphs 29 and 30). Bancon et al. also '989 discloses that the additional sorbents are optional (possible) and one skilled in the art would understand that the primary aggregate carbon dioxide sorbent is inherently capable of removing hydrocarbons and NO_x. Additionally, claim 1 recites that "at least some" of the hydrocarbons and NO_x are adsorbed on the adsorbent and no other adsorbent. It is submitted that "at least some" of those impurities will adsorbed on the primary sorbent and not the additional sorbents even if they are present.

18. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the adsorbents are extremely effective for the removal of the other impurities) are not recited in rejected claim 1. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Marcheschi can be reached on 571-272-1374. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Frank M. Lawrence/
Primary Examiner, Art Unit 1797

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